

## HOW EFFICIENT IS THE PROTECTION OF BIODIVERSITY THROUGH NATURAL PROTECTED AREAS IN ROMANIA?

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**Abstract.** Natural protected areas are an important component of sustainability, aimed at preserving a part of the current biodiversity for the future generations. Romania has declared numerous protected areas during the process of joining the European Union, particularly NATURA 2000 sites, but the question is: How effective is the management of sites declared under the pressure of time? In order to answer the question, this study uses data from the competent authorities on the presence of a custodian (with or without a management contract) and of a management plan for each natural protected area. After processing the data to answer each question in a binary manner, the results were mapped and synthesized. Our findings indicate that roughly 50% of the Romanian natural protected areas of benefit upon an effective protection, suggesting that little progress was achieved in the decade succeeding their declaration. Therefore, much hope is placed in the newly created Agency for the future.

**Keywords:** custodian, management plan, management contract, sustainable development, conservation.

**Rezumat. Cât este de eficientă protecția biodiversității prin arii naturale protejate în România?** Ariile naturale protejate sunt o componentă importantă a dezvoltării durabile, având ca scop conservarea unei părți a biodiversității actuale pentru generațiile viitoare. În procesul de aderare la Uniunea Europeană România a declarat numeroase arii naturale protejate, în special situri NATURA 2000, dar se pune problema cât este de eficientă administrarea acestor arii declarate sub presiunea timpului? Pentru a răspunde la întrebare, acest studiu folosește date de la autoritățile competente privind prezența custozilor, a contractelor și planurilor de management pentru fiecare arie naturală protejată. După procesarea datelor, menită să asigure prezența unui răspuns binar la fiecare întrebare, acestea au fost cartografiate și sintetizate. Rezultatele arată că cca. 50% din ariile naturale protejate din România beneficiază de o protecție efectivă, arătând că procesul înregistrat după declararea lor este nesemnificativ. Astfel, așteptările față de nou înființata agenție a ariilor naturale protejate sunt mari.

**Cuvinte cheie:** custode, plan de management, contract de management, dezvoltare durabilă, conservare.

### INTRODUCTION

Sustainable development involves, from a practical perspective, the restoration of degraded ecosystems, assessing the impact of current activities and internalizing the social and environmental externalities, as well as preserving a part of the current biodiversity for the future generations (PETRIȘOR & PETRIȘOR, 2014); the third goal is achieved by declaring natural protected areas (MÜCHER et al., 2009; KATI et al., 2014; STAN et al., 2014; OPRȘAL et al., 2018). For this purpose, the European Union created a transnational network of natural protected areas starting from two directives, Birds and Habitats; the aim is not a strict preservation of biodiversity, but a sustainable management involving the local communities in the process of drafting effective plans (STĂNCIOIU et al., 2010; SINGH et al., 2014). The network consists of Areas of Special Conservation Interest created in relationship to the Habitat Directive, Special Protection Areas under the Birds Directive (SPAs) and sites connecting the first two (PĂTROESCU et al., 2007; MÜCHER et al., 2009; EVANS, 2012; STRINGER & PAAVOLA, 2013).

The Romanian protected areas were conceived from the very beginning according to the guidelines of the International Union for the Conservation of Nature, with slight variations (MUNTEANU & SEVIANU, 2014). Nevertheless, the declaration of new areas, performed at a very fast pace in relationship to the accession of the country to the European Union, was not an easy process (VANONCKELEN & VAN ROMPAEY, 2015), generating overlapping categories (IOJĂ et al., 2010) and a consequent lawsuit from the European Union (COJOCARIU et al., 2010). Currently, natural protected areas cover 18% of the national territory (STĂNCIOIU et al., 2010), a share in line with other European countries (KATI et al., 2014).

Previous studies carried out in Romania assessed the efficiency of the national system of natural protected areas by looking at the overlap of categories (IOJĂ et al., 2010), the coverage of biogeographical regions (PETRIȘOR, 2008; PETRIȘOR & PETRIȘOR, 2017) or priority habitats (PETRIȘOR, 2016a), landform diversity (PETRIȘOR, 2009), coverage of wetlands (PETRIȘOR, 2010) or evidence of environmental impacts within their perimeter (PETRIȘOR, 2016a, b; 2018a, b). Most studies employed the Geographical Information Systems (GIS) in conjunction with spatial indicators (PĂTROESCU et al., 2007).

The present study aims at assessing the efficiency of Romanian natural protected areas based on the presence of a custodian (with or without a management contract) and of a management plan, using data from the authorities in charge.

### DATA AND METHODS

The study used spatial data on Romanian Natural Protected areas, freely available on the Internet page at <http://www.mmediu.ro/beta/domenii/protectia-naturii-2/arii-naturale-protejate/> and a consolidated file with information on their management: custodians, management contract, and management plan. The file contained detailed information,

but we converted all the details to a binary format (presence/absence), considering the information from the perspective of the moment. For example, if the custodian declared that the procedure for drafting the management plan was initiated, but not completed, we considered that the area did not have a plan, excepting for the cases where an ongoing project is directed at drafting the plan; if the management contract was expired, we considered it did not exist; and if no information was available, we assimilated it to the lack of existence of plans or contracts.

The file was merged with the official database, using the unique identification code for matching the two; the information in the new file was reviewed and completed (for example, by assimilating the Administration of Danube Delta Biosphere Reserve to a custodian with a management contract, and the law of the Reserve with a management plan). The revised file was used to produce the maps presented in the article.

### RESULTS AND DISCUSSION

The results are presented as maps; for a better visualization separate maps were produced to display the status of custodians, with or without a management contract (Fig. 1) and of the management plans (Fig. 2). Fig. 1 shows that more than half of the natural protected areas have a custodian, but very few of them have a management contract. Similarly, Fig. 2 indicates that more than half of the protected areas have a management plan.

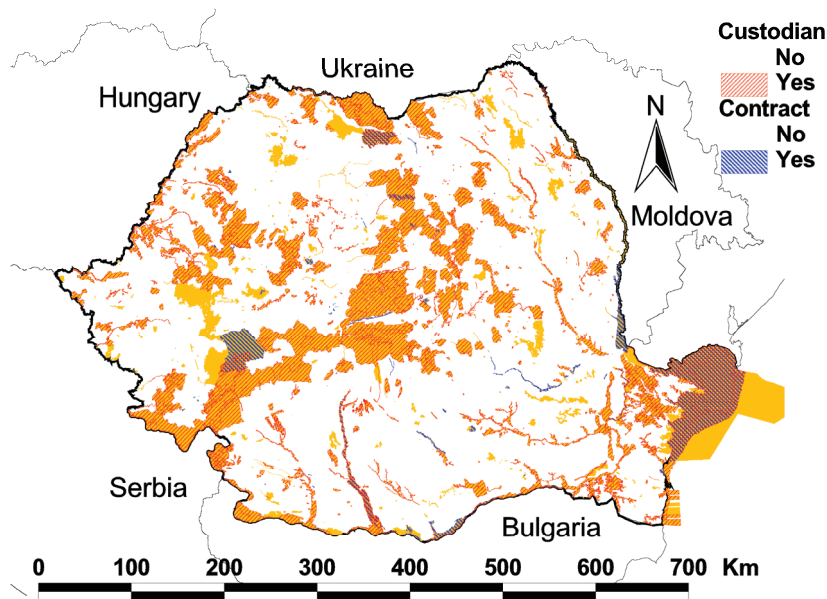


Figure 1. Spatial distribution of the Romanian natural protected areas with an assigned custodian, who has or not a management contract for his/her activity. The yellow background indicates a natural protected area (original).

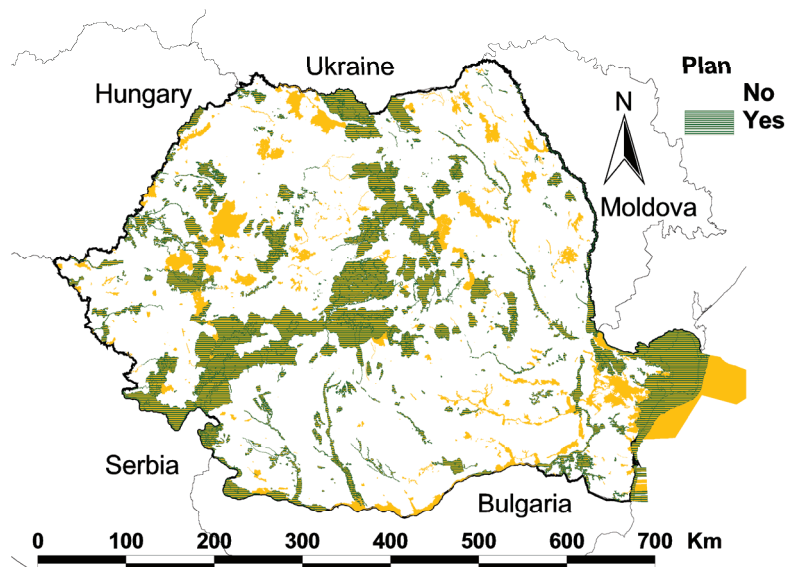


Figure 2. Spatial distribution of the Romanian natural protected areas with a management plan. The yellow background indicates a natural protected area (original).

The joint information is displayed in Fig. 3 and Table 1. The table confirms the previous findings, but there are slight differences; the differences are explained by the size of the area. Most of the small ones lack a custodian and/or a management plan. The table indicates that very few areas – the largest ones – have a custodian with a management contract. The shares of areas with a custodian who has a management contract and also a management plan or not are both below 1%, suggesting that the process of assigning custodians and contracting them is only in its very beginning. The shares of natural protected areas with a management plan and with or without a custodian, safeguarding their effective administration, are roughly around  $50\% \pm 5\%$ .

Provided that the process of declaring natural protected areas had its peak in Romania around 2005-2007, related to the accession of the country to the European Union, which required, among others, the implementation of natural protected areas under the Natura 2000 program (Areas of Special Conservation Interest and Special Protection Areas), it can easily be noticed that little progress was achieved in the following decade. It can be only hoped that the creation of a special dedicated Agency could help reducing the gap between the declared level of protection (20% of the national territory covered by natural protected areas) and the effective protection.

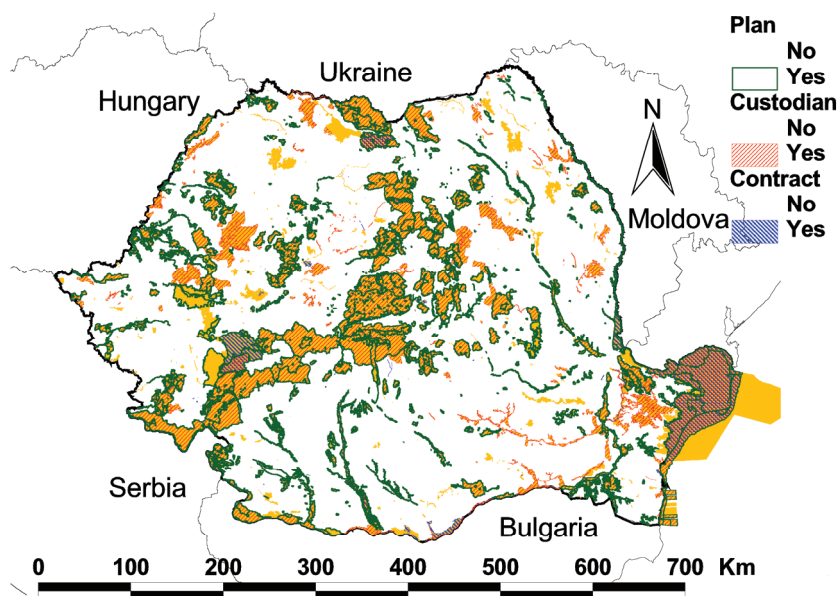


Figure 3. Spatial distribution of the Romanian natural protected areas with an assigned custodian, who has or not a management contract for his activity, and a management plan. The yellow background indicates a natural protected area (original).

Table 1. Overall status of the Romanian natural protected areas: presence of custodians, management contract and plans.

Protected areas with:	Custodian	Management contract	Management plan	Custodian and management contract	Custodian and management plan	Custodian, management contract and plan
No.	987	102	862	7	734	6
% (of 1572)	62.79	6.49	54.83	0.45	46.69	0.38

## CONCLUSION

The findings indicate that roughly 50% of the natural protected areas of Romania benefit from effective protection, measured by the existence of a management plan and a custodian. It appears that little progress was achieved in the decade succeeding the peak of declaring new protected areas, especially NATURA 2000 sites. Nevertheless, the creation of the new dedicated Agency could substantially contribute to a better management of the Romanian natural protected areas.

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